



Iowa Department of Transportation

2009 5 PERCENT MOST SEVERE SAFETY NEEDS REPORT

Background

Section 1401 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) amended Section 148 of Title 23 USC to create a new Highway Safety Improvement Program (HSIP) as a “core” Federal Highway Administration program with separate funding. The purpose of the HSIP is to reduce traffic fatalities and serious injuries on public roads. As part of the new HSIP, states are required to submit an annual report describing not less than 5 percent of their highway locations exhibiting the most severe safety needs. The intent of this provision is to raise public awareness of highway safety needs and challenges in the states.

This report must include an assessment of:

- potential remedies to hazardous locations identified;
- estimated costs associated with remedies; and
- impediments to implementation other than cost.

Discussion

Highway crashes are very complex. Contributing factors can include a roadway’s design, pavement conditions (e.g. rain, snow and ice), a vehicle’s mechanical condition (e.g. tires, brakes, lights), a driver’s behavior (e.g. speeding, inattentiveness and seat belt usage), as well as the driver’s condition (e.g. alcohol use, age-related conditions, physical impairment). In fact, the driver’s behavior and condition factors are the primary cause in an estimated 67 percent of highway crashes and a contributing factor in an estimated 95 percent of all crashes.

As such, highway safety needs go beyond just physical improvements to a specific roadway or intersection, and include changes to driver behavior. These are best addressed with a multi-disciplinary approach using engineering, enforcement, emergency response, and education strategies.

Iowa’s most severe safety needs

Based on an analysis of Iowa’s 2001–2007 fatal and major injury crashes, Iowa’s most severe safety needs are related to crashes involving:

- intersections;
- single vehicles running off the road;
- vehicles crossing the medians on freeways;
- unbelted drivers and passengers;
- impaired drivers; and
- speeding.

The analysis following this discussion identifies the 5 percent of Iowa's most severe safety needs in each of the areas listed above.

Historically, the Iowa DOT's intersection "Safety Candidate List" identified the 200 highest ranked intersections relative to crash history. Iowa's 5 percent most severe intersection safety needs are the highest 5 percent of these intersections (10 intersections). There are more than 100,000 miles of public roads in Iowa. Candidate roadway safety projects are the 5,000 miles of roadway with the greatest crash history. Therefore, Iowa's 5 percent most severe corridor safety needs are 5 percent of this 5,000 miles (250 miles).

Iowa, like many low populated rural states, has relatively low traffic volumes on most of its 113, 836 miles of public roads. As such it requires crash data from a large number of years to confidently identify locations with high concentrations of fatal and major injury crashes. This FY 2009 5 percent most severe safety needs report is based on seven years of crash data (2001-2007). It is the Iowa Department of Transportation's goal to base future reports on ten years of crash data. Our crash data prior to 2001 is not of sufficient quality to use in this annual analysis and report.

Proposed Improvements and Schedules

In establishing engineering, education, enforcement, and emergency response priorities, state agencies consider factors beyond those depicted in this report. For instance, decisions regarding any roadway or intersection improvements are based on detailed engineering studies that consider the strategies most appropriate for site-specific conditions, as well as the cost and anticipated effectiveness of those improvements. Scheduling of these improvements is also contingent upon the availability of highway safety improvement funds.

The following pages detail Iowa's most severe 5 percent safety needs for Federal Fiscal Year 2010. These initial analyses are based on 2001-2007 crash and roadway data bases. A review of each individual crash report will be necessary to ascertain the appropriateness of each intersection or corridor in this report.

  9/24/09
Steve Gent, P.E. Date
Director
Office of Traffic and Safety

Intersection Crashes

(Highest 5 percent based on data from 2001-2007)

County	Nearest City	Location	Rural/Urban	Fatal and Major Injury Crashes	Fatalities and Major Injuries	Potential Remedies (1)	Estimated Costs (1)	Impediments (1)	Status/Program Year
Jasper	Mingo	US 65 & IA 117 & IA 330 (3 miles northwest of Mingo)	Rural	10	16	Proposed Restricted Median	\$750,000		2010
Scott	Davenport	US 61/140th St & Co Rd Y-48/110th Ave (1 mile west of Davenport)	Rural	9	11	Adv. Signal Warning	\$100,000		2009
Polk	Clive/Urbandale	US 6/Hickman Rd & NW 128th St	Urban	8	11	Extend Turn Bays, Adjust Phasing	\$248,000		2009
Polk	Des Moines	Tuttle St & SW 8th St	Urban	8	10	Add Signals	\$300,000		2009
Woodbury	Sioux City	SW Ramp Terminal of I-29 with US 77	Urban	7	11	Interchange Modification			Under Design
Scott	Davenport	US 61/Harrison St & W Locust St	Urban	7	7				City to implement recommendations from Study
Black Hawk	Waterloo	US 63/Sergeant Rd & W Ridgeway Ave	Urban	6	12	Extend Turn Bays, Upgrade Signals	\$375,000		2010
Black Hawk	Cedar Falls	Iowa 58 & Viking Rd	Urban	6	8	Additional and lengthen turn bays	\$3,300,000		

SELECTION CRITERIA:

FIVE PERCENT OF THE 200 INTERSECTIONS WITH THE HIGHEST NUMBER OF FATAL AND MAJOR INJURY CRASHES DURING 2001-2007

TIES WERE THEN RANKED BY NUMBER OF PEOPLE WHO DIED OR RECEIVED A MAJOR INJURY, THEN BY THE NUMBER OF PEOPLE RECEIVING MINOR INJURIES

Intersections From This Report Which Are Completed or Intersections Which Are Completed/Under construction From Previous Reports

Intersection Crashes

(Highest 5 percent based on data from 2001-2007)

County	Nearest City	Location	Rural/Urban	Potential Remedies (1)	Estimated Costs (1)
Floyd	Rudd	US 18 & Co Rd T24/Echo Ave (1.5 miles west of Rudd)	Rural	Eliminate Skew	\$448,862
Polk	Des Moines	Day St & 19th St	Urban	Rebuilt as part of I-235 Reconstruction	
Polk	Des Moines	US 6/Douglas Ave & 38th St	Urban	Traffic Signals	\$150,000
Johnson/Iowa	Kalona	Co Rd F-67 & Co Rd W-38	Rural	Intersection Beacon	\$25,000
Buchanan	Independence	IA 150/Jamestown Ave/170th St	Rural	Paved Shoulders	\$200,000
Black Hawk	Waterloo	IA 281 & Co Rd V-49	Rural	Roundabout	\$800,000
Sioux	Sioux Center	Co Rd K-42 & B-14	Rural	Stop Signs	\$500
Muscatine	Muscatine	US 61 & Hershey Ave (Muscatine)	Urban	Interchange	\$5,341,500
Washington	Ainsworth	US 218 & Co Rd G-36/220th St (3 1/4 miles north of Ainsworth)	Rural	Interchange	\$4,500,000

Highest Multiple Vehicle Cross Median Crash Density Corridors
Rural Interstate/Freeway
2001 to 2007

COUNTY	ROUTE	FROM	TO	LENGTH (MI)	TOTAL MULTI- VEHICLE CROSS MEDIAN CRASHES	ANNUAL MULTI- VEHICLE CROSS MEDIAN CRASH DENSITY (CRASHES/MI/YR)	TOTAL FATAL AND MAJOR INJURY MULTI- VEHICLE CROSS MEDIAN CRASHES	Potential Remedies	Estimated Costs	Impediments	Status/Program Fiscal Year
JOHNSON	I-80	MP 246.8	MP 251.9	5.0	10	0.286	2	Cable Median Barrier	\$900,000	None	2011
CLARKE	I-35	MP 38.5	MP 43.5	5.0	9	0.259	2	Cable Median Barrier	\$900,000	None	2013
STORY	I-35	MP 102	MP 107	5.0	9	0.257	2	Cable Median Barrier	\$900,000	None	2010
IOWA	I-80	MP 220.9	MP 225.9	5.0	8	0.229	2	Cable Median Barrier	\$900,000	None	2013
JOHNSON/CEDAR	I-80	MP 251.8	MP 256.8	4.9	7	0.202	2	Cable Median Barrier	\$882,000	None	2011
CEDAR	I-80	MP 260.1	MP 265.1	5.0	7	0.200	2	Cable Median Barrier	\$900,000	None	2011
CEDAR	I-80	MP 256.8	MP 260.1	3.3	7	0.200	2	Cable Median Barrier	\$540,000	None	2011
STORY	I-35	MP 108.6	MP 113.6	5.0	7	0.200	2	Cable Median Barrier	\$900,000	None	2010
POLK/STORY	I-35	MP 100.4	MP 102	1.6	6	0.172	2	Cable Median Barrier	\$288,000	None	2008
IOWA	I-80	MP 207	MP 212	5.0	6	0.171	2	Cable Median Barrier	\$900,000	None	2008
WARREN	I-35	MP 43.5	MP 48.5	5.0	6	0.171	3	Cable Median Barrier	\$900,000	None	2013
IOWA	I-80	MP 216.6	MP 220.9	4.3	6	0.171	2	Cable Median Barrier	\$774,000	None	2013

Total 54.1

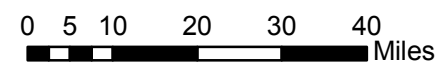
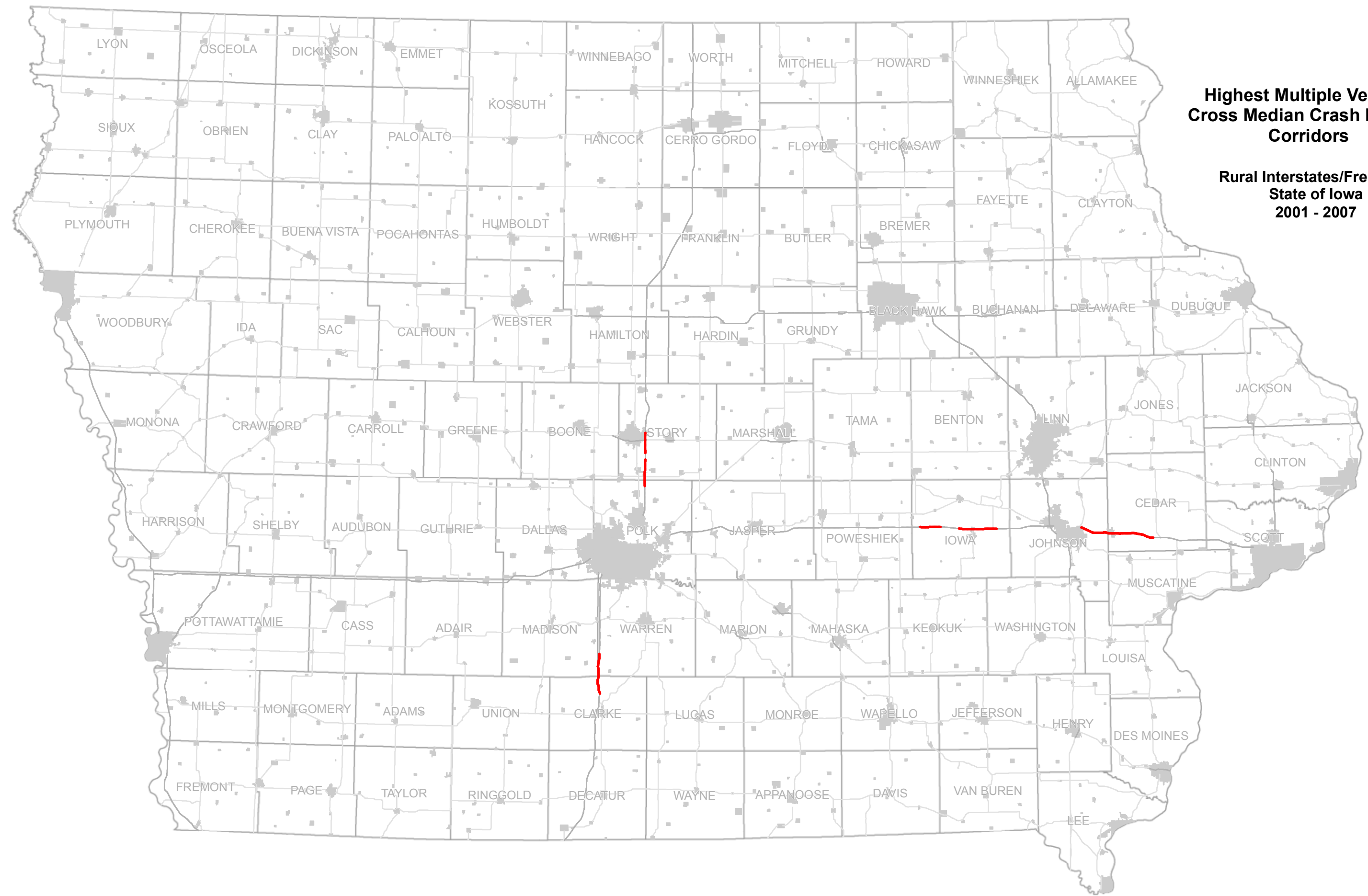
QUALIFYING CONDITIONS

- Multiple vehicle cross median crashes.
- “Moving” five-mile long sections, based on 1/10th mile segments, with at least twice statewide average MVCMT crash density.
- At least two fatal or major injury MVCMT crashes during the analysis period.

STATEWIDE AVERAGE = 0.056 MVCMT CRASHES/MILE/YEAR

**Highest Multiple Vehicle
Cross Median Crash Density
Corridors**

**Rural Interstates/Freeways
State of Iowa
2001 - 2007**



SINGLE VEHICLE RUN-OFF-THE-ROAD CRASHES -- RURAL, PRIMARY AND PAVED SECONDARY ROADS (2001-2007)

COUNTY	ROUTE	ROAD NAME	FROM	TO	LENGTH (MI)	FATAL AND MAJOR INJURY SINGLE VEHICLE RUN-OFF- ROAD CRASHES	ANNUAL FATAL AND MAJOR INJURY SINGLE VEHICLE RUN-OFF-ROAD CRASH DENSITY (CRASHES/MI/YR)	Potential Remedies *	Estimated Costs	Impediments	Status/Program Fiscal Year
MILLS	L-35	221ST ST	225TH ST	MILLS/POTTAWATTAMIE COUNTY BORDER	7.116	7	0.141	2		**	
LINN	US 151	DUBUQUE RD	~0.2 MI EAST OF 62ND ST	WEST CORPORATE BOUNDARY OF SPRINGVILLE	5.154	5	0.139	1	\$1,133,880	None	2010
MARSHALL	E-35	MAIN ST RD	EAST CORPORATE BOUNDARY OF MARSHALLTOWN	ZELLER AVE	4.756	4	0.120	TCD,Signing	\$496,120		2011***
BOONE	R-21	NATURE RD	MARION DR	130TH ST	5.066	4	0.113	TCD,Signing	\$3,000		2010
DUBUQUE	US 20		~0.25 MI WEST OF OLDE CASTLE RD	PLACID RD INTERCHANGE	5.075	4	0.113	1	\$1,116,500		2011
JEFFERSON	H-46	GLASGOW RD	EAST INTERSECTION OF GREENBRIER CIR	REDWOOD AVE	5.585	4	0.102	2		**	
DUBUQUE	US 52		EAST CORPORATE BOUNDARY OF HOLY CROSS	WEST CORPORATE BOUNDARY OF RICKARDSVILLE	5.682	4	0.101	1	\$1,000,000	None	2009-2011
LEE	X-23	WEST POINT RD	IOWA 2	175 ST	5.768	4	0.099	2		**	
LEE	US 61		~0.15 335TH ST	LEE/DES MOINES COUNTY BORDER	7.246	5	0.099	1	\$1,594,120	**	
POTTAWATTAMIE	L-34	ROAD L34	RAILROAD HWY	SUMAC RD	9.016	6	0.095	2		**	
BUTLER	IOWA 57		IOWA 14	WESTBROOK ST	7.722	5	0.093	1	\$849,420	**	2010
WINNESHIEK	IOWA 139		POLE LINE RD	IOWA/MINNESOTA STATE BORDER	11.428	7	0.088	1	\$1,257,080	**	2011 Possible
JOHNSON	US 6		420TH ST	JOHNSON/MUSCATINE COUNTY BORDER	6.89	4	0.083	1	\$1,057,900	None	2010
MUSCATINE	US 61		TUCKER	~0.1 MI EAST OF 153RD ST	7.214	4	0.079	1	\$1,587,080	None	2011
DES MOINES	US 61		LEE/DES MOINES COUNTY BORDER	WEST AVE	7.364	4	0.078	1	\$1,620,080	**	2010
WEBSTER	US 20	235TH ST	QUAIL AVE INTERCHANGE	CHASE AVE	9.819	5	0.073	1	\$2,160,180	**	2009
LOUISA	X-37	COUNTY RD X 37	EAST CORPORATE BOUNDARY OF COLUMBUS CITY	COUNTY RD G62	8.219	4	0.070	2			2011***
HARRISON	F20L	EASTON TRL	EAST CORPORATE BOUNDARY OF PISGAH	~0.6 MI EAST OF ONEIDA AVE	10.345	5	0.069	TCD			2011***
WASHINGTON	W-55	WAYLAND RD	WASHINGTON/HENRY COUNTY BORDER	SOUTH CORPORATE BOUNDARY OF WASHINGTON	8.809	4	0.065	1	\$500,000		2011***
JOHNSON	US 6		JOHNSON/IOWA COUNTY BORDER	DEER VIEW ST	8.86	4	0.064	1	\$974,600		2011
SCOTT	IOWA 130	NEW LIBERTY RD	280 ST	WEST CORPORATE BOUNDARY OF MAYSVILLE	9.378	4	0.061	1	\$880,000		
MARION	IOWA 163		MARION/JASPER COUNTY BORDER	WEST CORPORATE BOUNDARY OF PELLA	9.539	4	0.060	1	\$1,550,890	**	2008-5 miles
PLYMOUTH	C-60		K-42	POLK AVE	13.438	5	0.053	4	\$500,000		2011***
MUSCATINE	US 6		CORN ST	IOWA 38	11.176	4	0.051	1	\$1,229,360	**	
GUTHRIE	IOWA 4		NORTH CORPORATE BOUNDARY OF PANORA	GUTHRIE/GREENE COUNTY BORDER	11.45	4	0.050	1	\$1,259,500	**	
POTTAWATTAMIE	US 6		~0.1 MI WEST OF HUNT AVE	SOUTH CORPORATE BOUNDARY OF OAKLAND	20.368	7	0.049	1	\$2,240,480	None	2010

Total 222.483

SITE SELECTION CRITERIA:

FIVE PERCENT OF THE 5,000 MILES WITH THE HIGHEST AVERAGE ANNUAL FATAL AND MAJOR INJURY SINGLE VEHICLE RUN-OFF-THE-ROAD CRASH DENSITY DURING 2001-2007
(STATEWIDE AVERAGE = .0.14 CRASHES/MILE/YEAR)

Footnotes:

* Potential Remedies/Improvements

- (1) Paving a part of the shoulder and installing shoulder rumble strips
- (2) Study needed. Alternatives include:
 - a. Paving a part of the shoulder and installing shoulder rumble strips
 - b. Installing rumble strips along the edge of the pavement
 - c. Widen the shoulder
- (3) Upgrading roadway adding two-foot paved shoulders and intermittent shoulder rumble strips
- (4) Improved curve
- (5) Converted 2-lane to 4-lane roadway

Cost estimate is unknown until after study is completed.

Impediments:

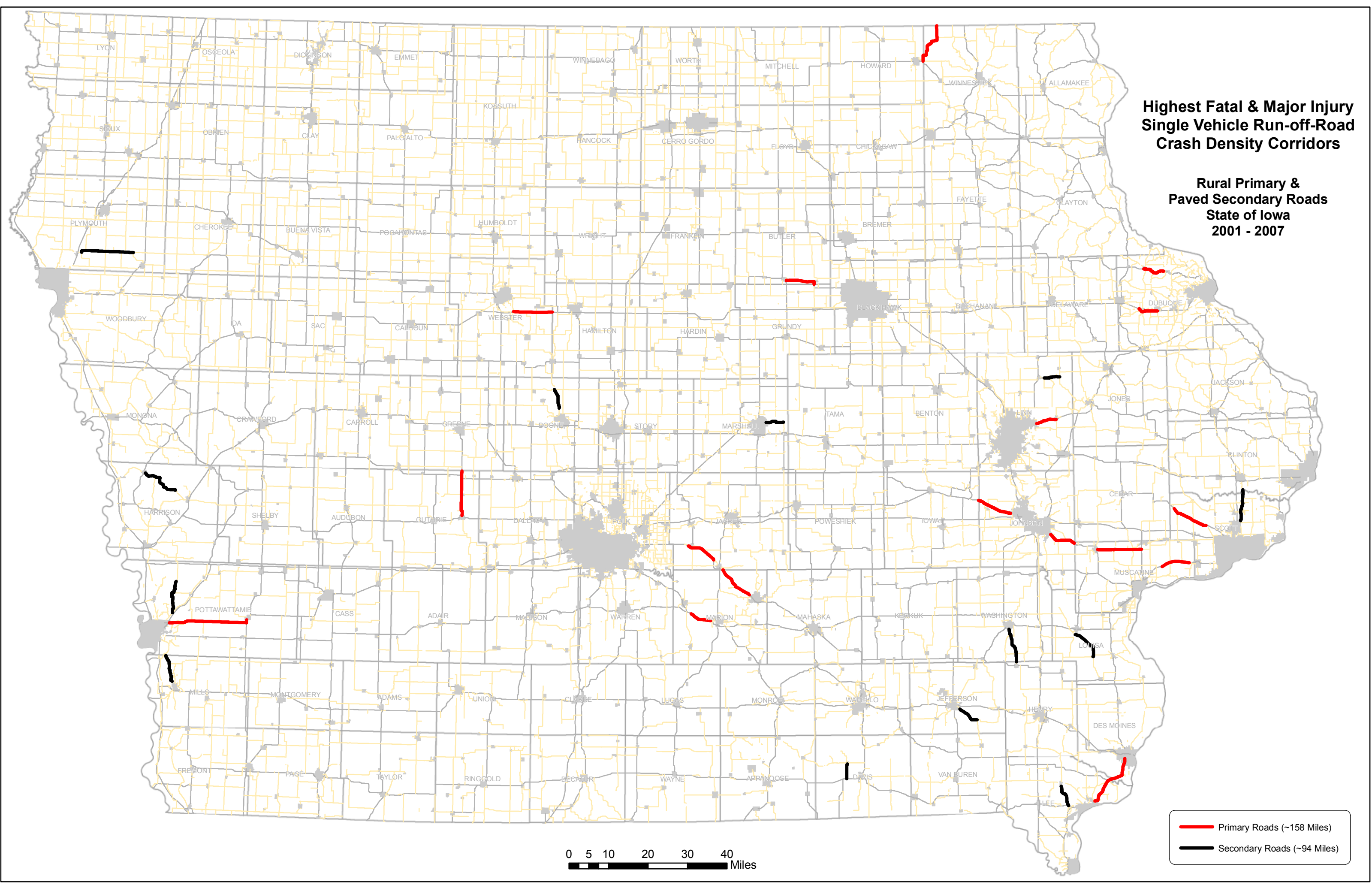
(**) Possible impediments are unknown until after a study is completed. There could be environmental or right-of-way impediments, if shoulder widening is required.
(***) TSF applied for

Roadway Segments From This Report Which Are Completed or Roadway Segments Which Are Completed/Under Construction From Previous Reports

COUNTY	ROUTE	ROAD NAME	FROM	TO	LENGTH (MI)	IMPROVEMENT *	COST	YEAR
PLYMOUTH	US 75		~0.1 MI SOUTH OF 325TH ST	SOUTH CORPORATE BOUNDARY OF HINTON	2.995	1	\$600,000	2004
STORY	US 30		INTERSTATE 35	610TH AVE	4.582	1	\$900,000	2007
BOONE	US 30	220TH ST	WEST CORPORATE BOUNDARY OF BOONE	X AVE	9.382	1	\$1,900,000	2006
WASHINGTON	US 218		240TH ST	SOUTH CORPORATE BOUNDARY OF RIVERSIDE	12.513	1	\$2,500,000	2007
CLINTON	US 61		CLINTON/SCOTT COUNTY BORDER	WASHINGTON BLVD	8.371	1	\$1,700,000	2007
CLINTON	US 61		212TH ST	IOWA 136 INTERCHANGE	10.495	1	\$2,100,000	2007
MARION	IOWA 5		ATTICA RD INTERCHANGE	MARION/MONROE COUNTY BORDER	14.099	1	\$1,400,000	2007
ALLAMAKEE	IOWA 76		MINNESOTA STATE LINE	WAUKON	17.87	1	\$1,800,000	2009
WAPELLO	US 34		OTTUMWA	AGENCY	3.24	1, 5		2008
MARION	IOWA 5		~0.4 MI WEST OF 60TH AVE	MCKIMBER ST INTERCHANGE	5.451	7	\$1,400,000	2007
JASPER	IOWA 163	IOWA 163 W	WEST CORPORATE BOUNDARY OF PRAIRIE CITY	QUICKSILVER AVE INTERCHANGE	7.723	5	\$1,699,060	2008
DAVIS	V-17	ICE AVE	US 63	SOUTH CORPORATE BOUNDARY OF DRAKESVILLE	3.783	4		2009
LINN	E-16	SAWYER RD	JORDANS GROVE RD	PRAIRIEBURG RD	4.067	4		2008
SCOTT	Y-68	SCOTT PK RD	NORTH CORPORATE BOUNDARY OF ELDRIDGE	SCOTT/CLINTON COUNTY BORDER	8.034	1		2004-05

**Highest Fatal & Major Injury
Single Vehicle Run-off-Road
Crash Density Corridors**

**Rural Primary &
Paved Secondary Roads
State of Iowa
2001 - 2007**



0 5 10 20 30 40 Miles

- Primary Roads (~158 Miles)
- Secondary Roads (~94 Miles)

Highest Fatal & Major Injury Speed-related Crash Density Corridors
Rural, Primary Non-Interstate/Freeways
2001 to 2007

COUNTY	ROUTE	DESCRIPTION	LENGTH (MI)	FATAL AND MAJOR INJURY SPEED- RELATED CRASHES	ANNUAL FATAL AND MAJOR INJURY SPEED-RELATED CRASH DENSITY (CRASHES/MI/YR)	Potential Remedies (1)	Estimated Costs (2)	Impediments (3)	Status (4)
MAHASKA	US 63	WAPELLO COUNTY (CITY OF EDDYVILLE NCL) TO IOWA 163	6.811	7	0.147				b
LINN	US 151	CITY OF MARION ECL TO JONES COUNTY	9.526	9	0.135				b,c
MARION	IOWA 163	CITY OF PELLA NCL TO JASPER COUNTY	9.539	9	0.135				b,c
SCOTT	US 61	MUSCATINE COUNTY TO 0.5 MILES WEST OF CITY OF DAVENPORT WCL	5.392	5	0.132				a
DALLAS	US 6	CITY OF ADEL ECL TO CITY OF WAUKEE WCL	5.841	5	0.122				b,c
WAPELLO	US 63	DAVIS COUNTY TO CITY OF OTTUMWA	6.332	5	0.113				c,a
WINNESHIEK	IOWA 139	IOWA 9 TO MINNESOTA STATE LINE	11.428	9	0.113				c,d
CLINTON	US 61	END OF FREEWAY (2.5 MILES NORTH OF CITY OF DE WITT NCL) TO IOWA 136	10.495	8	0.109				a
BOONE	US 30	BEGIN OF MULTI-LANE (0.7 MILES WEST OF CITY OF OGDEN WCL) TO BEGIN OF FREEWAY (IOWA 930)	17.497	13	0.106				a
WASHINGTON	US 218	HENRY COUNTY TO IOWA 22	22.855	16	0.100				a
IOWA	IOWA 220	JACKSON COUNTY TO CITY OF DUBUQUE SCL	7.234	5	0.099				c
DUBUQUE	US 61	JACKSON COUNTY TO US 151	10.148	7	0.099				a
DUBUQUE	US 20	DELAWARE COUNTY TO US 151	20.770	14	0.096				a
LEE	US 61	CITY OF KEOKUK NCL TO DES MOINES COUNTY, EXCLUDING THE CITY OF FORT MADISON	21.283	14	0.094				a
JASPER	IOWA 163	POLK COUNTY TO MARION COUNTY, EXCLUDING BEGIN OF FREEWAY TO IOWA 14	12.636	8	0.090				c
MUSCATINE	US 61	LOUISA COUNTY TO SCOTT COUNTY	27.381	17	0.089				a
WEBSTER	US 20	BEGIN OF MULTI-LANE (0.7 MILES WEST OF US 169) TO HAMILTON COUNTY	13.747	8	0.083				a
JOHNSON	US 6	IOWA COUNTY TO MUSCATINE COUNTY, EXCLUDING CITIES OF CORALVILLE AND IOWA CITY	15.751	9	0.082				c,d
LINN	IOWA 1	JOHNSON COUNTY TO JONES COUNTY, EXCLUDING CITY OF MOUNT VERNON	11.033	6	0.078				c
LOUISA	IOWA 92	WASHINGTON COUNTY TO US 61, EXCLUDING CITY OF COLUMBUS JUNCTION	14.744	8	0.078				a
JEFFERSON	US 34	CITY OF BATAVIA ECL TO HENRY COUNTY, EXCLUDING CITY OF FAIRFIELD AND TWO-LANE PORTION	18.436	10	0.077				a

Total 247.611

Note:

Driver contributing circumstances: exceeded authorized speed, driving too fast for conditions, lost control, followed too close or over correcting/over steering

SITE SELECTION CRITERIA:

FIVE PERCENT OF THE 5,000 MILES WITH THE HIGHEST AVERAGE ANNUAL FATAL AND MAJOR INJURY CRASH DENSITY FOR SPEED-RELATED CRASHES DURING 2001 - 2007

(STATEWIDE AVERAGE = 0.025 FATAL AND MAJOR INJURY CRASHES/MILE/YEAR)

Footnotes:

(1) Potential Remedies include:

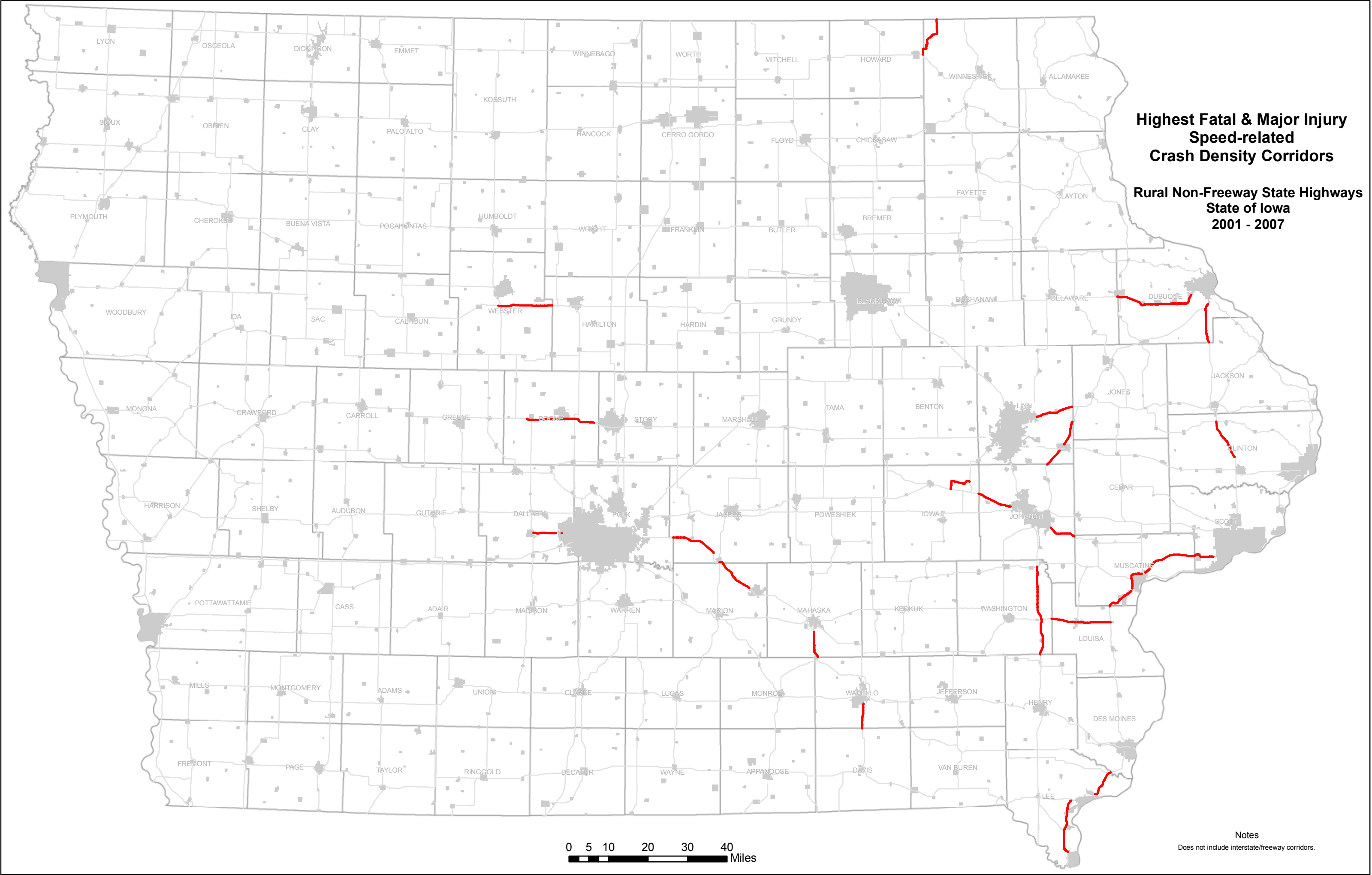
- public awareness;
- increased speed enforcement in the corridors

(2) The estimated cost is unknown and variable. Identification of these corridors provides an opportunity for state and local enforcement agencies to target these corridors for additional speed enforcement using existing staff and funding resources.

(3) Reduction in enforcement officers due to budget constraints, military call up of staff and other enforcement responsibilities.

(4) Status

- a. Corridor enforcement event funded in 2008-09
- b. Targeted spot enforcement within corridor funded in 2008-09
- c. Additional local enforcement completed in 2008-09
- d. Paved shoulders and shoulder rumble strips completed or programmed



Highest Density Corridors of Unbelted Drivers & Passengers Killed or Seriously Injured
Rural State Highways
2001 to 2007

COUNTY	ROUTE	DESCRIPTION	LENGTH (MI)	KILLED OR SERIOUSLY INJURED UNBELTED PASSENGERS	ANNUAL KILLED OR SERIOUSLY INJURED UNBELTED PASSENGER DENSITY (PASSENGERS/MI/YR)	Potential Remedies (1)	Estimated Costs (2)	Impediments (3)	Status (4)
BOONE	US 30	BEGIN. OF MULTI-LANE (0.7 MILES WEST OF CITY OF OGDEN WCL) TO BEGIN. OF FREEWAY (IOWA 930)	17.497	16	0.131				a
CASS	INTERSTATE 80	POTTAWATTAMIE COUNTY TO ADAIR COUNTY	23.597	16	0.097				a
DUBUQUE	US 20	DELAWARE COUNTY TO CITY OF DUBUQUE ECL	20.770	14	0.096				a
PLYMOUTH	US 75	SIOUX CITY URBAN AREA LIMITS TO IOWA 60, EXCLUDING CITIES OF HINTON AND MERRILL	17.530	11	0.090				c
WARREN	INTERSTATE 35	CLARKE COUNTY TO POLK COUNTY	24.183	15	0.089				a
CLARKE	INTERSTATE 35	DECATUR COUNTY TO WARREN COUNTY	18.539	11	0.085				a
JOHNSON	INTERSTATE 80	IOWA COUNTY TO CEDAR COUNTY, EXCLUDING CITIES OF CORALVILLE AND IOWA CITY	15.411	9	0.083				a
POTTAWATTAMIE	INTERSTATE 29	MILLS COUNTY TO HARRISON COUNTY, EXCLUDING THE CITY OF COUNCIL BLUFFS	18.929	11	0.083				a
STORY	INTERSTATE 35	POLK COUNTY TO HAMILTON COUNTY	24.219	14	0.083				a
DALLAS	IOWA 141	CITY OF PERRY TO POLK COUNTY	17.354	10	0.082				c
DECATUR	INTERSTATE 35	MISSOURI STATE LINE TO CLARKE COUNTY	24.299	14	0.082				a
POWESHIEK	INTERSTATE 80	JASPER COUNTY TO IOWA COUNTY	24.141	13	0.077				a

Total 246.469

SITE SELECTION CRITERIA:

FIVE PERCENT OF THE 5,000 MILES WITH THE HIGHEST AVERAGE ANNUAL FATAL AND MAJOR INJURY CRASH DENSITY OF UNBELTED DRIVERS/PASSENGERS DURING 2001 - 2007

(STATEWIDE AVERAGE = 0.021 FATAL AND MAJOR INJURY CRASHES/MILE/YEAR)

Footnotes:

(1) Potential remedies include:

- public awareness and education; and
- increased seat belt enforcement in these corridors.

(2) The estimated cost is unknown and variable. Identification of these corridors provides an opportunity for state and local enforcement agencies to target corridors for additional seat belt use enforcement using existing staff and funding resources. Providing funding for additional enforcement will be considered.

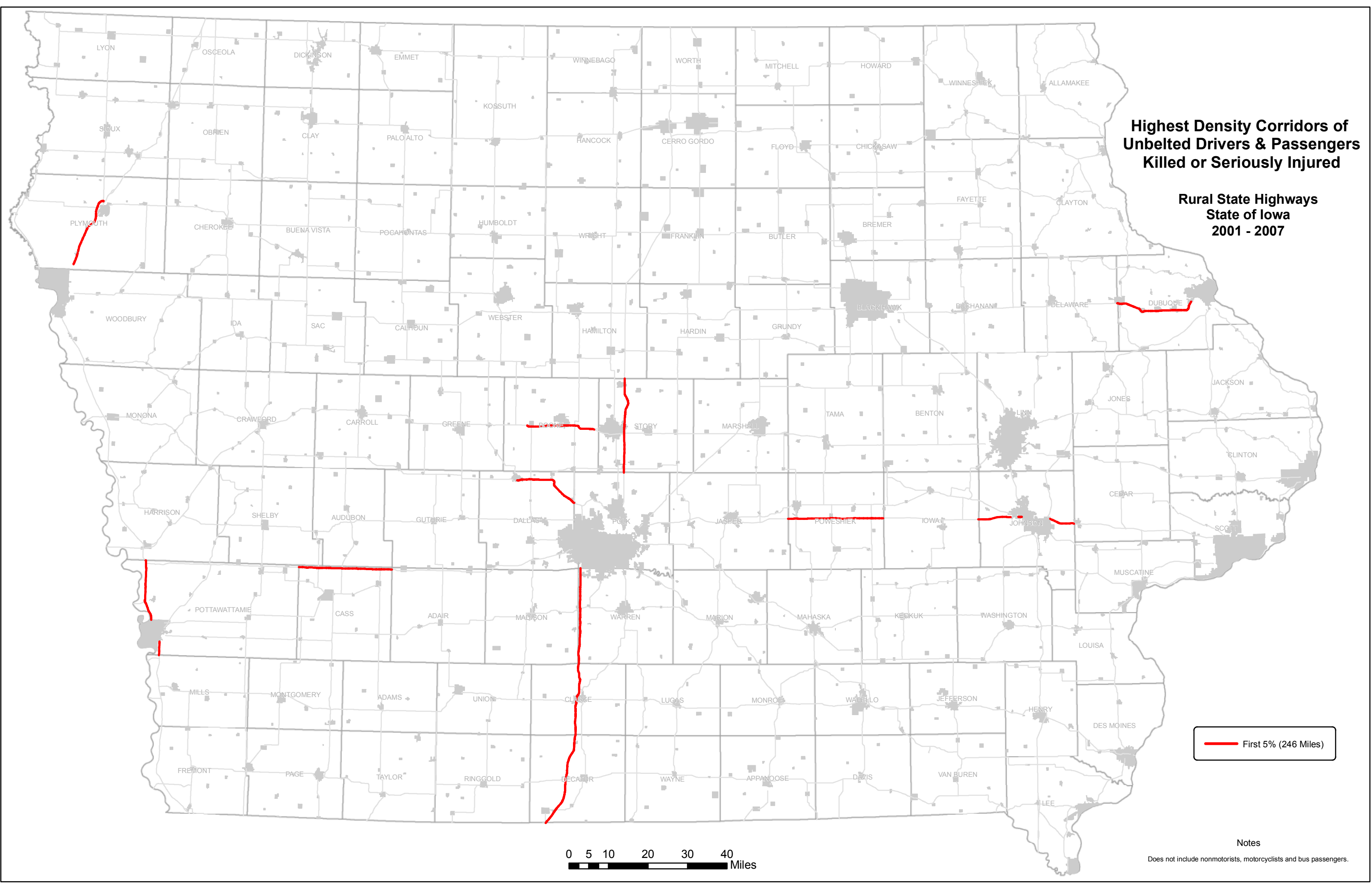
(3) Reduction in enforcement officers due to budget constraints, military call up of staff and other enforcement responsibilities.

(4) Status

- a. Corridor enforcement event funded in 2008-09
- b. Targeted spot enforcement within corridor funded in 2008-09
- c. Additional local enforcement completed in 2008-09
- d. Paved shoulders and shoulder rumble strips completed or programmed

**Highest Density Corridors of
Unbelted Drivers & Passengers
Killed or Seriously Injured**

**Rural State Highways
State of Iowa
2001 - 2007**



First 5% (246 Miles)

0 5 10 20 30 40 Miles

Notes
Does not include nonmotorists, motorcyclists and bus passengers.

Highest Fatal & Major Injury Alcohol & Drug-related Crash Density Corridors
Rural State Highways
2001 to 2007

COUNTY	ROUTE	DESCRIPTION	LENGTH (MI)	FATAL AND MAJOR INJURY ALCOHOL/DRUG-RELATED CRASHES	ANNUAL FATAL AND MAJOR INJURY ALCOHOL/DRUG-RELATED CRASH DENSITY (CRASHES/MI/YR)	Potential Remedies (1)	Estimated Costs (2)	Impediments (3)	Status (4)
DES MOINES	US 61	LEE COUNTY TO END OF MULTI-LANE, EXCLUDING CITY OF BURLINGTON	8.85	5	0.081				a
MUSCATINE	US 61	LOUISA COUNTY TO SCOTT COUNTY	27.381	13	0.068				a
DUBUQUE	US 20	DELAWARE COUNTY TO CITY OF DUBUQUE ECL	20.77	8	0.055				a
IOWA	INTERSTATE 80	POWESHIEK COUNTY TO JOHNSON COUNTY	24.148	8	0.047				a
JOHNSON	US 6	IOWA COUNTY TO MUSCATINE COUNTY, EXCLUDING CITIES OF CORALVILLE AND IOWA CITY	15.751	5	0.045				c,d
MARSHALL	IOWA 14	JASPER COUNTY TO GRUNDY COUNTY, EXCLUDING CITY OF MARSHALLTON	17.794	5	0.040				c,d
DUBUQUE	US 52	JACKSON COUNTY TO CLAYTON COUNTY, EXCLUDING CITIES OF DUBUQUE AND RICKARDSVILLE	26.449	7	0.038				b,d
POTTAWATTAMIE	INTERSTATE 29	CITY OF COUNCIL BLUFFS NCL TO HARRISON COUNTY	18.929	5	0.038				a
UNION	US 34	ADAMS COUNTY TO CLARKE COUNTY, EXCLUDING CITIES OF CRESTON AND AFTON	23.669	6	0.036				a
STORY	INTERSTATE 35	POLK COUNTY TO HAMILTON COUNTY	24.219	6	0.035				a
HARRISON	INTERSTATE 29	POTTAWATTAMIE COUNTY TO MONONA COUNTY	28.323	6	0.030				a
JASPER	INTERSTATE 80	POLK COUNTY TO POWESHIEK COUNTY	30.729	6	0.028				a

Total 267.012

Notes:

BAC>0, alcohol test refused, drug test positive, drug test refused or driver condition classified as under the influence of alcohol/drugs/medication

SITE SELECTION CRITERIA:

FIVE PERCENT OF THE 5,000 MILES WITH THE HIGHEST AVERAGE ANNUAL FATAL AND MAJOR INJURY CRASH DENSITY INVOLVING AN IMPAIRED DRIVER DURING 2001 - 2007

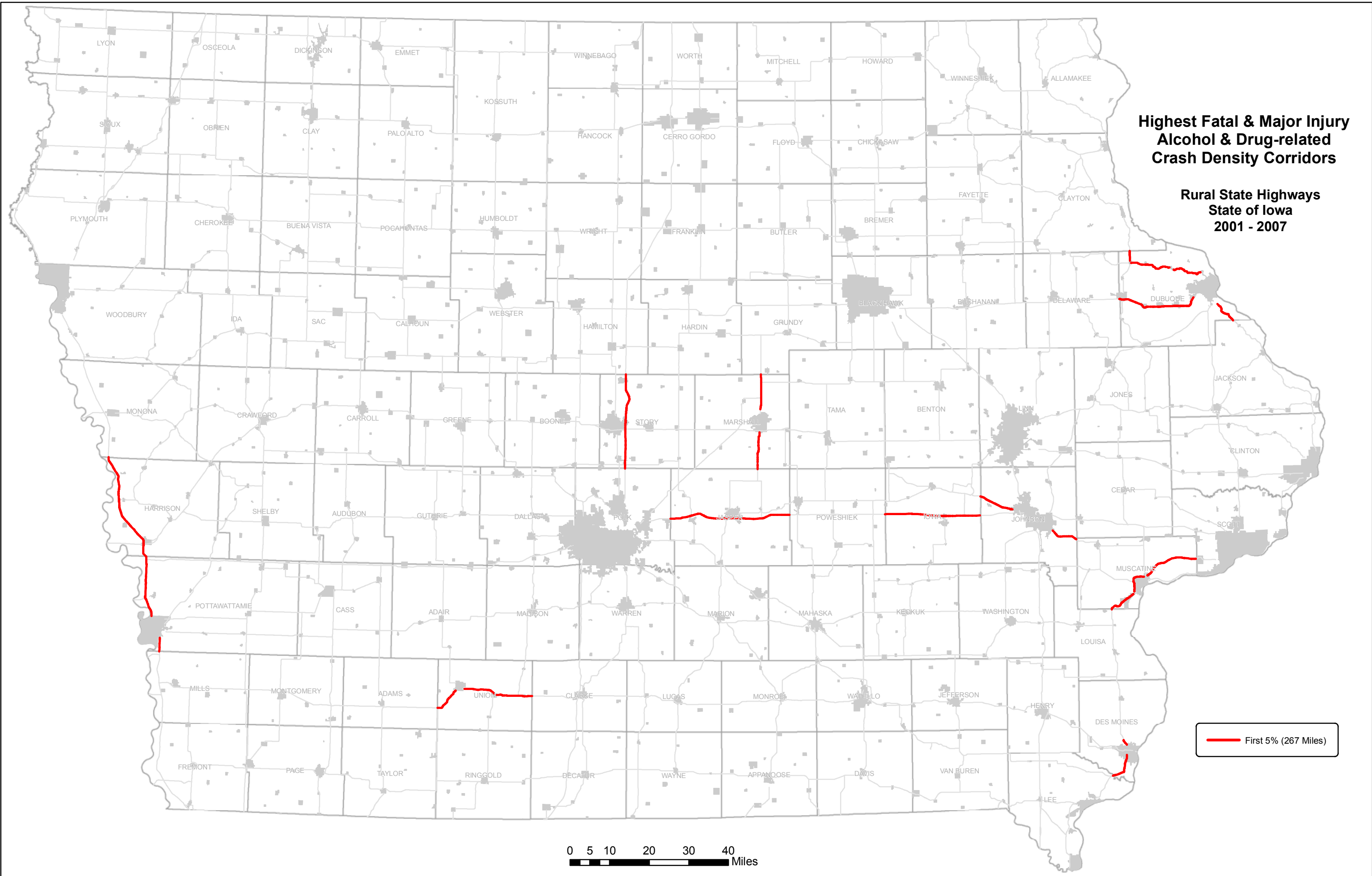
(STATEWIDE AVERAGE = 0.011 FATAL AND MAJOR INJURY CRASHES/MILE/YEAR)

Footnotes:

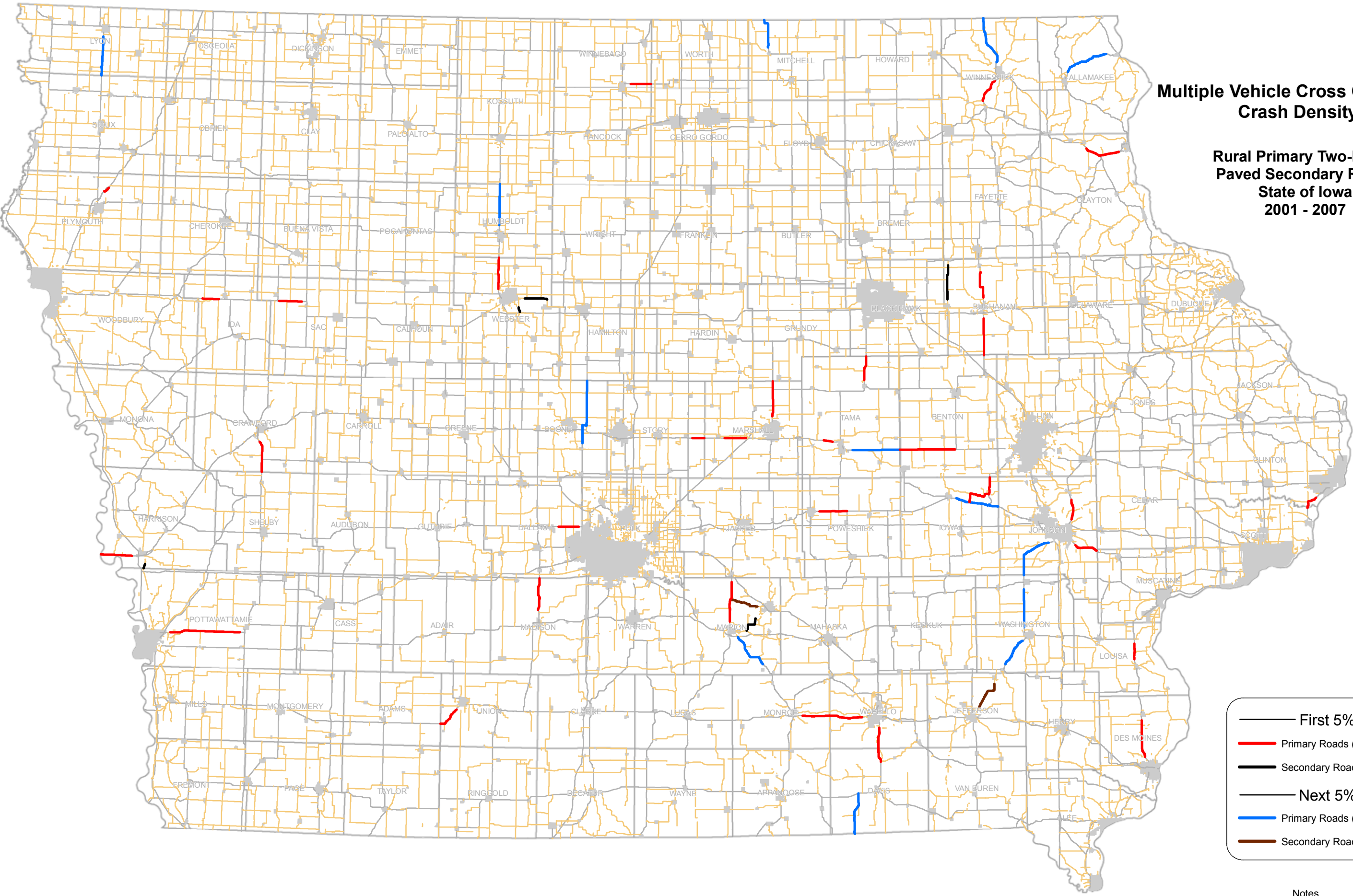
- (1) Potential Remedies include:
public awareness; and
increased corridor monitoring by enforcement officers.
- (2) The estimated cost is unknown and variable. Identification of these corridors provides an opportunity for state and local enforcement agencies to increase monitoring of driver behavior within these corridors using existing staff and funding resources. Providing funding for additional enforcement will be considered.
- (3) Reduction in enforcement officers due to budget constraints, military call up of staff and other enforcement responsibilities.
- (4) Status
a. Corridor enforcement event funded in 2008-09
b. Targeted spot enforcement within corridor funded in 2008-09
c. Additional local enforcement completed in 2008-09
d. Paved shoulders and shoulder rumble strips completed or programmed

Highest Fatal & Major Injury Alcohol & Drug-related Crash Density Corridors

Rural State Highways
State of Iowa
2001 - 2007



First 5% (267 Miles)



**Multiple Vehicle Cross Centerline
Crash Density**

**Rural Primary Two-lane &
Paved Secondary Roads
State of Iowa
2001 - 2007**

— First 5% —

Primary Roads (224 Miles)

Secondary Roads (21 Miles)

— Next 5% —

Primary Roads (139 Miles)

Secondary Roads (36 Miles)